



**CONTRA COSTA
WATER DISTRICT**

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CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
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Attention: Mr. Rick Breitenbach

Subject: CCWD Comments on CALFED Draft Programmatic EIS/EIR

Dear Mr. Snow:

The Contra Costa Water District ("CCWD" or "District") appreciates the opportunity to provide comments on the Draft Programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR) prepared for the CALFED Bay-Delta Program and released on March 16, 1998.

The CALFED Bay-Delta Program is to be congratulated for its work thus far in developing primary objectives and solution principles that address the needs of all stakeholders of the Bay-Delta system. The three Bay-Delta alternatives and the common programs outlined in the Draft Programmatic EIS/EIR include sufficient components to allow selection of a preferred alternative that will meet these primary objectives. CALFED and its consultants, through public meetings and public outreach, have provided the opportunity for productive stakeholder input and this has resulted in a Draft Programmatic EIS/EIR that is a major step toward protection of the Bay-Delta and responsible management of California's water resources.

CCWD's attached comments on the Draft Programmatic EIS/EIR are separated into general policy comments and technical comments. The District's main comments are summarized as follows:

1. CCWD's interests, including financial, water quality, environmental, operational interests, in the \$450 million Los Vaqueros Project must be protected if CALFED were to consider use of the Kellogg Creek watershed for additional south-of-Delta offstream storage, and such a proposal would require full support of the residents of Contra Costa County;
2. Protection of all beneficial uses in the Delta, including water quality, must be a core element of the Bay-Delta solution;

Mr. Lester A. Snow

CCWD Comments on CALFED Draft Programmatic EIS/EIR

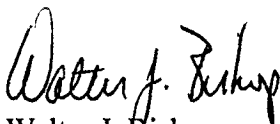
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3. The Draft Programmatic EIS/EIR must acknowledge and reaffirm the substantial protections afforded to in-Delta water users under the Delta Protection Act for existing facilities and develop stronger protections for any new facilities;
4. Habitat restoration should occur throughout the Delta to maximize the potential for recovery of target species;
5. Any decisions regarding an isolated facility must be based on water quality and/or ecosystem needs that will require substantial data to determine justification after ecosystem improvements have been made;
6. Benefits must be shared at every stage of a phased implementation;
7. The impacts of relocating municipal and industrial intakes in the Delta must be fully analyzed and must not result in relaxation of existing Delta water quality standards;
8. The water use efficiency analysis overestimates "real" water savings;
9. CCWD believes that the creation of a new ecosystem entity to direct the many ecosystem restoration programs, and potentially, to operate new facilities is fully warranted;
10. CALFED must not include an out-of-valley San Joaquin Valley agricultural drain as an action within the Water Quality Program;
11. CALFED must develop a framework for coordinated regulation of existing and future wastewater discharges and agricultural drainage into the Delta watershed;
12. CALFED must acknowledge on-going ecosystem restoration efforts by CCWD;
13. CCWD's Delta and Los Vaqueros assurances must be included within the CALFED assurances package;
14. The descriptions of alternatives in the Draft Programmatic EIS/EIR are too vague to allow direct assessments of impacts and benefits to CCWD and other water users;
15. All elements of the Ecosystem Restoration Program, in particular flow-based elements, must be scientifically justified and the water quality and supply impacts must be quantified;
16. The alternatives in the Draft Programmatic EIS/EIR must be analyzed using facility operating rules that maximize water quality to meet urban drinking water needs.

The Contra Costa Water District looks forward to working with CALFED through public forums and the stakeholder process to develop a Bay-Delta solution that improves and enhances the Delta ecosystem, water quality, water supply reliability and reduces the vulnerability of Delta functions. If you have any questions, please contact Richard Denton, Water Resources Manager, at (925) 688-8187.

Sincerely,



Walter J. Bishop
General Manager

Attachment

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CCWD General Comments on the Draft Programmatic EIS/EIR

Protection for CCWD's interests if the Los Vaqueros Project is considered as an additional CALFED storage facility.

CALFED is examining an expanded Los Vaqueros storage facility as a possible south-of-Delta storage element of a preferred alternative. CALFED has determined that the Los Vaqueros site *"could provide greater flexibility and water supply benefits than other south of Delta storage reservoirs"* [Interim Phase II Report, p.68]. With regard to ecosystem benefits of such a project CALFED has further concluded that *"In-Delta storage and near-Delta storage (created in a location near the Delta, such as the Los Vaqueros reservoir site) would be functionally equivalent with respect to the capability to respond quickly to changing flow requirements needed to reduce fishery impacts at critical times"* [Interim Phase II Report, p. 84]. Although such a facility could provide a wide range of environmental, water quality and supply benefits, the District will not support a project involving the existing Los Vaqueros Project or use of the Los Vaqueros or Kellogg reservoir sites without the following assurances:

- The project improves water quality and reliability for CCWD;
- The project enhances the Delta environment;
- The project protects and enhances the fisheries and terrestrial species benefits provided by the existing Los Vaqueros Project;
- The project preserves and increases the recreational opportunities of the Los Vaqueros Project;
- CCWD must retain control of the watershed and operation of the reservoir;
- The project protects and reimburses the financial investment made by the CCWD customers who financed the existing \$450 million Los Vaqueros Project.

Protection of all beneficial uses in the Delta must be a core element

The implementation of a preferred alternative cannot involve significant redirection of impacts and must reduce conflicts in the system (two of CALFED's solution principles). Alternative 3, as proposed, will not enhance water quality in the South Delta (as measured by TDS and bromide concentration). Although CALFED model predictions indicate that some areas in the South Delta will actually improve under the Alternative 3 configuration (while some areas degrade), the District's hydrodynamic and salinity analysis suggests that there will generally be water quality degradation in the South Delta for any alternative involving an isolated facility of moderate size (5,000 cfs) or greater.

Export conveyance will continue through the Delta under all alternatives so there is a compelling reason for exporters to protect the Common Pool and actively support water quality improvement in the South Delta.

Inclusion of CCWD's assurances within the CALFED assurance package

Contra Costa Water District requests that the CALFED assurance package, when developed, include the following CCWD assurances:

- Reconfirmation of the substantial provisions of the Delta Protection Act to ensure an adequate water supply and salinity control for Delta water users that are in or immediately adjacent to the Delta and conveniently served from the Delta.
- Guarantees that only water truly surplus to the needs of Delta water users and areas of origin can and will be exported.
- Adoption and implementation of additional water quality standards in the South Delta for fish and wildlife, municipal and industrial needs, and agriculture as well as more stringent municipal and industrial water quality standards at Rock Slough.
- Guarantees that CCWD's ability to operate its three Delta diversions and its Los Vaqueros reservoir will not be impacted by any additional restrictions or requirements, including biological or contractual requirements.
- Assurance that CCWD's annual contract for 195,000 acre-feet of water with the USBR will not be impacted by any process that is not currently in place, (e.g., no new additional requirements beyond the CVPIA and existing water law).
- Assurance that the CCWD will be able to fully participate in water transfer opportunities and will not be prejudiced directly or indirectly by its connection or lack of a connection to any new facilities.
- Assurance that any CALFED solution will not impact the recreational opportunities of the Delta, including quality of the Delta and access to recreational areas.

The Draft Programmatic EIS/EIR must acknowledge and reaffirm the Delta Protection Act.

The CALFED preferred alternative must not restrict the District's ability to secure water supplies of adequate quality and reliability. The Draft programmatic EIS/EIR must include a discussion of State watershed protection and area of origin statutes (Water Code sections 11460 and 10505 et seq.) and the Delta Protection Act (Water Code sections 12200 et seq.). The county and watershed of origin statutes assign temporal water rights priorities to areas upstream of the Delta meaning that their water rights are always deemed senior in time to the water rights of the CVP and SWP. The Delta Protection Act establishes statutory priority for Delta water users in addition to the temporal water rights priorities already provided by the county of origin and

watershed of origin statutes. These statutes were enacted to protect the Delta and in-Delta water users from the State and Federal Projects. The statutes were the "Assurance Package" that allowed these projects to proceed. Any new "Assurance Package" must include a commitment to these long established principles.

In enacting the Delta Protection Act, the California Legislature added two new substantive measures to protect in-Delta water users. The first measure was salinity control, which was extensively litigated in regard to Decision 1485 and discussed at length in the "Racanelli Decision" (United States v. State Water Resources Control Board (1986) 182 Cal.App.3d 82; see particularly the discussion at pages 138-144). The second substantive protection added to the Water Code by the Delta Protection Act concerns maintenance and provision of "an adequate water supply" for in-Delta users. Section 12202 mandates that:

Among the functions to be provided by the State Water Resources Development System, in coordination with the activities of the United States in providing salinity control for the Delta through operations of the Federal Central Valley Project, shall be the provision of salinity control and an adequate water supply for the users of water in the Sacramento-San Joaquin Delta (emphasis added).

Section 12203 further adds that:

It is hereby declared to be the policy of the State that no person, corporation or public agency or the State or the United States should divert water from the channels of the Sacramento-San Joaquin Delta to which the users within said Delta are entitled.

Section 12204 adds that:

In determining the availability of water for export from the Sacramento-San Joaquin Delta no water shall be exported which is necessary to meet the requirements of Sections 12202 and 12203 of this chapter.

The mandate to provide "an adequate water supply" is separate from the salinity control directive. While in-Delta users are subject to the same constitutional, public trust, and public welfare doctrines as are other water users, the Delta Protection Act gives them an additional statutory priority which is not available to water users located outside the Delta and this must be addressed in analyses of CALFED water supply reliability such as those in the Draft Programmatic EIS/EIR.

Habitat restoration should occur throughout the Delta to maximize the potential for recovery of target species

The CALFED alternatives, and especially Alternative 3, have little or no environmental restoration programs in the central and southern Delta. Rehabilitation of ecosystem values in the central and south Delta must be included through setback levees and vegetated berms designed to

increase habitat values and protect fish from predation while increasing the opportunity for fish to move away from the export pumps. Such a program may preclude the need for others, such as the Interim South Delta Program, which is fraught with fisheries and salinity impacts.

Additionally, to maximize the probability that habitat restoration will result in successful recovery of target species, habitat restoration must be implemented in a variety of locations throughout the Delta and not be restricted to any specific area. The concept of an extensive and diverse habitat restoration was apparent in the CUWA through-Delta proposal that was the basis for CALFED Alternative 2E. This approach must be incorporated into all CALFED alternatives.

CALFED has located habitat restoration activities away from the south Delta in the north Delta because the habitat restoration is "*prudently distant from the South Delta pumping facilities*" (EIS/EIR, p. 2-22). CALFED should also acknowledge that new habitat projects could be in close proximity to the North Bay Aqueduct pumping plant on Barker Slough as well.

The need for an isolated facility must be compelling and based on water quality and/or ecosystem needs

The District insists that additional data be collected and detailed analyses be completed before the need for and size of an isolated component of a dual facility can be established conclusively. Any future decision to proceed with design and construction of an isolated facility must only be triggered based on the stringency of future EPA drinking water standards and whether those standards could be met through improved treatment technologies and the needs of the ecosystem. However, impacts to drinking water for in-Delta diverters like CCWD must also be considered.

Drinking water triggers must be linked to new drinking water standards including, but not limited to, the regulatory outcome of Stage 2 disinfectants / disinfection byproduct rule and the Enhanced Surface Water Treatment Rule negotiations expected in 2002. If water could be treated to the new future standards with new technology that is readily available and feasible, at a cost less than an isolated facility, an isolated facility would not need to be triggered on the basis of drinking water quality benefits. CALFED will need to have triggers for drinking water quality that are based on regulations which will be issued after 2002 based on the Safe Drinking Water Act.

Triggers for decision making regarding construction of an isolated component of a dual conveyance system to address fisheries issues must be considered independently from drinking water triggers. An isolated facility must only be considered if in-Delta improvements and ecosystem improvement programs fail to sufficiently restore fisheries and if there is sufficient scientific understanding of the fisheries impacts and benefits of a screened isolated facility.

Benefits must be shared at every stage of phased implementation

CCWD supports the principle that all stakeholders of the CALFED Bay-Delta Program must improve during every stage of implementation, in other words, "getting better together". The Draft Programmatic EIS/EIR does not provide sufficient detail regarding the phasing, planning, and need for new facilities and how benefits would be shared throughout implementation. Common programs must be part of the early implementation actions. The need for new storage and conveyance facilities must be continuously monitored and evaluated against the progress and success of common program actions. This approach must be spelled out explicitly in CALFED's Draft Programmatic EIS/EIR - especially in the Implementation Strategy Appendix.

The impacts of relocating the District's intakes must be fully analyzed

The Draft PEIS/EIR Project Alternatives Technical Appendix (page 42) refers to "*relocating water supply intakes (such as North Bay Aqueduct, Tracy and Contra Costa Water District intakes) to avoid salts and organic carbon that reduce the ability to recycle water and that complicate disinfection and are sources of disinfection byproducts.*" The current M&I standard at the CCWD's Contra Costa Canal intake provides partial protection of drinking water quality for CCWD's customers while at the same time providing incidental protection for other Delta beneficial uses. Any relocation of CCWD's Rock Slough intake must provide equivalent Delta protection as the current Rock Slough standard. The cost of relocating CCWD's Rock Slough intake cannot result in any financial, water quality or water supply impacts to CCWD.

Water use efficiency analysis over-estimates 'real' water savings.

Consistent with the comments submitted by the California Urban Water Agencies, CCWD supports the need for a strong water use efficiency program as part of the responsible use and allocation of current and future water supplies. Efficient management of water resources will help reduce the mismatch of supply and demand on waters of the Bay-Delta system. CALFED's focus must be on providing technical and funding assistance for implementation of Best Management Practices (BMPs) and water recycling which are cost effective on a statewide basis. CALFED must emphasize its approach to assure that proper water conservation actions are implemented, and not pursue a use-based or population-based numerical savings target approach as a measure of success or assurance. Not only is a significant percentage of CCWD's demand for industrial use, the industrial demand is variable from year to year. Therefore, broadly defined conservation measures or BMPs or use-related reduction targets intended for municipal use will be inappropriate for CCWD.

CALFED must support working with others to identify new opportunities for water use efficiency, including supporting new techniques and technology and finding ways to implement conservation measures that are cost-effective from a statewide perspective, not just a local perspective. Additionally, CALFED must apply the same financial support criteria to water recycling. Where a recycling opportunity exists which may not be cost-effective for a local entity but would be on the basis of a state-wide cost-effectiveness test and where CALFED

deems production of that supply is required to meet Program objectives, supplemental state/federal funding must be made available to support the project to the level of state-wide cost effectiveness.

CCWD strongly concurs with CALFED's general statewide assumptions that conservation and recycling will in most cases only offset increasing unmet demands, will usually result in "real" savings only where discharge is to a salt sink, that conserved water must remain in the control of the conserver, and that conservation and recycling will, in most cases, not result in reduction in exports from the system except in years in which full demands in the export areas are already met. CCWD also recognizes that additional benefits such as water quality improvement, and reductions in diversions may accrue under certain circumstances, leading to achievement of other CALFED objectives.

In general, the District believes that CALFED's estimates for conservation savings are too high and cannot be considered to be realistic until CALFED specifies the conservation measures which can be used to achieve these high levels of conservation. Furthermore, the Draft Programmatic EIS/EIR must be more specific with regard to the local programs that agencies have already implemented or are planning to implement that will be included within the CALFED No-Action baseline (based on the baseline condition in Bulletin 160-98), which will not, and which programs will be part of CALFED's with-program incremental BMPs. Individual agencies will not be able to determine the extent of water savings that will need to be created within their service areas until these boundaries are established. Worse, if local agencies are not given enough credit towards the overall savings target, some local programs in the planning or early implementation stage could be discouraged.

CCWD has already implemented significant conservation BMPs and by 2020 plans to have another tier of BMPs implemented (reference: *CCWD's Future Water Supply Study 1996*). If these measures are collectively included within CALFED's no-action then CCWD's proportional share of water savings as projected in the Water Use efficiency appendix within the Bay Area region could become more reasonable. If the CALFED plan envisions a much more rigorous set of BMPs than now exist, it must state so clearly, and also define how they will be imposed and/or adopted.

The projected water conservation savings to be achieved by the additional CALFED proposals are very high and are far beyond what the BMPs will achieve. Although it is stated in the document that these numbers must not be used for planning purposes, they will become the *de facto* savings target to achieve if they remain in the CALFED package. This will affect virtually all water purveyors in the state.

The Draft Programmatic EIS/EIR assumptions of CCWD conservation levels in CALFED's No Action case are too high. This is an area that the District already has evaluated in its Future Water Supply Study (1996) and determined that it cannot implement higher levels of conservation savings without substantial unjustified disruptions in lifestyle and significantly higher costs. These problems must be addressed with specific solutions (such as legislated

mandatory compliance with restrictions on water use by customers) and accurate costs and sources of revenue to be provided by CALFED before they are accepted by urban water providers.

A new ecosystem entity must be created to help coordinate restoration projects

CCWD supports the comments of the California Urban Water Agencies to CALFED regarding the creation of the new ecosystem entity. CCWD recommends that CALFED develop a new ecosystem entity to direct the many ecosystem restoration programs, and potentially, to operate new facilities. This new entity would not possess regulatory authority. The purpose of the entity would be to implement a non-regulatory, highly coordinated adaptive management plan that will protect and improve the environment in a manner that meets the regulatory requirements that result from CALFED, thereby minimizing the need for regulatory interventions to protect fish and wildlife resources.

Ecosystem management must be adapted regularly and promptly to new scientific understanding and evaluation of prior effects. This new entity will be responsible for implementation of the adaptive management approach and responsible for all funds available for the Bay-Delta ecosystem programs and for prioritizing projects. The same entity holding the adaptive management authority must have ultimate responsibility in planning, coordinating and prioritizing the monitoring and study programs with input from the resource agencies and stakeholders.

CCWD believes that moving beyond the "command and control approach" of the regulatory status quo and developing a strong scientifically-based adaptive management program will result in a better future for all stakeholders. The new entity could be proactive with regard to ecosystem needs instead of reactive. To avoid regulatory actions, all stakeholders must understand and acknowledge that we must respond effectively to environmental needs as they arise, rather than deferring action until crises overwhelm the opportunity for preventative measures.

CALFED must not include an out-of-valley San Joaquin Valley agricultural drain as an action within the Water Quality Program

The District agrees with source control measures on the San Joaquin River specified by Agricultural Drainage and Runoff Action 1 and Action 2 (Water Quality Program Appendix, pp. 20 and 21, respectively). However, CCWD is very concerned about recent discussions within the CALFED Water Quality technical team about a valley-wide drain as an option for disposal of agricultural drainage from the San Joaquin Valley. This option is in serious conflict with CALFED's basic guiding principle that there be no redirected impacts and must be eliminated from any further consideration.

The District has historically opposed any extension of the San Luis Drain to the Delta (CCWD Board Resolution No. 85-11, February 13, 1985). The District strongly opposes the export of toxic

drainage from its sources to other locations, and, in particular, the environmentally sensitive and already degraded Bay-Delta system. The District believes that all contaminants must be controlled at their source so the water quality, public health and ecosystem impacts are not exported elsewhere. The District disagrees that any cost effective approach for a valley-wide drain in which all toxicants are reduced to a level that would not harm beneficial uses of receiving water has been demonstrated and evaluated for impacts. If toxins in the drainage could be reduced to levels that are harmless, an alternative to a valley-wide drain would be to also remove the salt so that the water could be put to beneficial uses, e.g., discharging directly into the San Joaquin River to provide much needed fish flows or reused for irrigation or for in-valley recycling.

The District requests that CALFED exclude a San Joaquin valley-wide drain from consideration in its water quality common program based on a lack of technical cost effective alternatives identified. The problem of salinity, selenium and boron contamination in the San Joaquin Valley must be solved at its source, in the valley, through changes in agricultural practices and retirement of land with significant drainage water quality problems. There is not an acceptable level of selenium load that could be discharged into the Bay-Delta from a mass emissions basis without resulting bioaccumulation of selenium in the tissue of aquatic species and buildup in the sediments. Current federal and state environmental laws, administered by CALFED member agencies would not permit such discharges into any of California's waterways.

CALFED must consider the coordinated regulation of projected wastewater discharges and agricultural drainage into the Delta

The Contra Costa Water District is very concerned about the water quality impacts in the Delta that can be expected to occur from increases in pollutant loads to the Sacramento-San Joaquin Delta and its tributaries because of the forecasted urban and industrial development in the Central Valley through 2030 and beyond. The CALFED watershed management and water quality common programs must specifically address the cumulative impacts of projected future increases in urban and industrial wastewater discharges and agricultural drainage. Most of these projected increases in pollutant discharges are likely to be upstream of drinking water intakes. New sources of salt, organic carbon, pathogens and metals from the estimated five million new inhabitants in the Central Valley could lead to significant degradation in water quality and reduce or nullify CALFED's efforts to improve drinking water quality for over 20 million Californians.

CALFED must address the incremental degradation in water quality from the forecasted development and population growth in the Central Valley and develop watershed-wide programs to address and significantly reduce their cumulative impacts on water quality. This is critical for protecting Delta water quality in the future and CALFED must assume a leadership role in addressing this problem.

CALFED's member agencies, such as the California State Water Resources Control Board and its Regional Water Quality Control Boards, must begin immediately to take actions to reduce the discharge of urban, industrial and agricultural wastewater and pollutant loads into the Bay-Delta system. Any new projects or expansions of existing projects that have the potential to degrade

water quality in the Delta must be required to fully eliminate their impacts through mitigation actions. Another approach would be to set total load limits for each watershed based on current or lower levels and require new projects to obtain pollution credits from existing dischargers to remain below those limits.

Given the very high cost of removing pollutants such as salt, organic carbon, pathogens, and metals at urban wastewater treatment plants (e.g. using reverse osmosis or nanofiltration), source control through best management practices could be a more cost-effective approach. For example, CALFED must explore the possibilities of limiting or eliminating certain industrial processes in favor of less polluting processes and collecting high pollutant load wastewater separately for special treatment.

A coordinated approach, applicable to all existing, new or proposed expansions of wastewater treatment plants, is important to ensure that all treatment plants are treated equitably and not regulated in a piece-meal fashion. It is not an efficient or equitable approach to only regulate the discharges from urban wastewater treatment plants and oil refineries when agricultural drainage, which constitute a large percentage of the pollutant load to the Bay-Delta, remain unregulated. CALFED must take the lead to develop a framework of incentives to reduce the pollutant loads from agricultural drainage. CALFED must also explore legislative means to regulate agricultural discharges of toxins such as selenium and pesticides to waterways leading into the Delta and elsewhere.

CALFED must acknowledge on-going ecosystem restoration efforts by CCWD

CALFED must acknowledge on-going payments by CCWD to the CVPIA restoration fund and the Category III program and credit those payments towards future CALFED restoration programs. Furthermore, CCWD's Los Vaqueros Project will provide environmental benefits to the Delta ecosystem once the reservoir is initially filled (expected by the spring of 1999). These factors must be taken into account by CALFED when considering financial responsibility for CALFED Delta restoration activities.

CCWD Technical Comments on the CALFED Draft Programmatic EIS/EIR**Insufficient range of operating rules considered in the Draft Programmatic EIS/EIR**

The rules governing the operation of the storage and conveyance facilities are just as important as the facilities themselves. CALFED has addressed this issue by studying the effect of small changes from a base set of operating rules. However, the water quality and water supply impacts are highly dependent on the choice of operating rules. For example, the operating rules for a new reservoir will be quite different if operated to maximize water quality rather than for water supply. The effect of varying the operating rules for new and existing facilities must be analyzed before any further modeling is carried out.

Generally the modeling assumptions for the existing system-wide operation simulations are designed to maximize yield (or minimize surplus Delta outflow) while protecting fish. Although water quality standards in the Delta are always assumed to be met in the modeling, the operation of the system could be altered to maximize water quality instead of simply operating to meet existing water quality standards in the Delta. CCWD has analyzed operating rules for such a purpose in order to investigate the limits of water quality that can be achieved with a given set of facilities. Improvements to delivered water quality can be achieved by emphasizing quality as an operational goal.

The apportionment of surplus water and the sharing of responsibility to meet in-basin needs (such as Bay-Delta standards) are defined in the Coordinated Operating Agreement (COA). These sharing agreements must change when/if new facilities are added to the system and new operating regimes are created which are not in the scope of the current COA. In fact, the existing COA is based on SWRCB Decision 1485. CALFED, to a large extent, has deferred the decision on new sharing agreements (allocation of newly developed water, for example) for simplicity. However, before stakeholders can make a meaningful assessment of the impacts and benefits for the CVP, SWP and other water users, realistic assumptions regarding allocation of new supplies must be made.

Descriptions of alternatives are too vague to allow assessment of impacts and benefits to contractors.

Another primary concern is the fact that the alternatives are not clearly and consistently defined in the Draft Programmatic EIS/EIR. Rather, the most detailed and refined descriptions of the CALFED alternatives are presented in the Phase II Interim Report, an appendix to the main Draft Programmatic EIS/EIR. The Draft Programmatic EIS/EIR document and other appendices detail a much broader set of alternatives. Although not clearly described, CCWD understands that the alternatives described in the Phase II Interim Report represent a selective subset of the wider list outlined in the main Draft Programmatic EIS/EIR.

The alternatives are explicitly described in the Phase II Interim Report but remain vague in key areas; specifically the location and size of additional storage which most stakeholders in the CALFED process recognize as a fundamental element of the solution. With the aid of other sections of the Phase II Interim Report, the District was able to establish that there are actually six alternatives analyzed within the Phase II Interim Report: the three basic alternatives, with and without additional storage. Many results in Chapter 4 of the Phase II Interim Report are not labeled specifically enough to allow the reader to know which alternative is being analyzed. For example, when "Alternative 1" is referred to, it is not clear if this alternative includes additional storage. Direct communication with CALFED staff was necessary to learn the relationship between the Phase II Interim Report and the other Draft Programmatic EIS/EIR documents. More detail must be made available to enable the reader to assess the modeling assumptions, impacts, and the alternatives in general.

The proposed additional storage locations must be identified for each of the alternatives. The location of additional storage (either north of, south of, or adjacent to the Delta) makes a significant difference in the performance and potential benefits of the alternative.

The environmental benefits and water supplier impacts of flow-related actions must be quantified.

The Phase II Interim Report states that the quantity of water needed to implement the ERPP ranges from 0 to 500 TAF, depending on water year type. The report must estimate the water supply impacts (and benefits) to the Projects. As the document currently reads there are no impacts to any contractor because ERPP flow requirements are met with either natural flow, acquired water from willing sellers, or with surface storage constructed specifically for environmental flow enhancement. Because ERPP water contributes to Delta outflow, and may not materialize due to incorrect estimates of acquired water, the assumed ERPP water in the Delta could underestimate the water quality impacts. A realistic analysis must be made with regard to the feasibility of acquiring the quantity of water under consideration in the ERPP on a stream-by-stream basis.

The full flow targets in the ERPP are implemented in each of the alternatives unlike the graduated implementation of water quality and supply actions. This assumption gives the impression that the full flow targets related to the ERPP will be achieved before any quality and supply actions are initiated. The CALFED solution must allow for shared benefits throughout implementation.

Water quality impacts of storing water on peat soils in the Delta

CCWD is concerned about proposals in the Draft Programmatic EIS/EIR (Phase II Interim Report, p. 68 and Project Alternatives, p. 77) to store water on Delta islands with peat soil. The concentrations of total organic carbon (TOC) in water stored on peat islands will increase because of the contact with peat soils and evaporation. When this stored water is subsequently discharged back into Delta channels, there will be an increase in TOC, and other contaminant

concentrations (e.g., salinity and bromide) at CCWD's intakes. This will result in increased production of disinfection by-products when this water containing TOC and bromide is later treated using chlorine, chloramines or ozone for use as drinking water, i.e., increased production of trihalomethanes (THMs) and bromate. CCWD, DWR and the California Urban Water Agencies testified at length about these impacts effects in the July-August, 1997, Delta Wetlands water rights hearings before the SWRCB. To avoid these significant impacts on urban water agencies, any in-Delta storage must be on islands with mineral soils and the filling and draining operations must be designed to improve rather than degrade Delta water quality, i.e., filling when Delta salinities are lowest and Delta outflows are high, and not discharging when stored water salinities exceed the salinities in the adjacent Delta channels or exceed a given maximum value. Similar operating rules would apply to other drinking water contaminants such as TOC and ecosystem factors such as temperature and dissolved oxygen. If in-Delta island storage components are unable to operate within these operating rule limitations, in-Delta island storage must not be included in the preferred alternative.

Water quality modeling analyses must be reviewed

The District questions the calibration methods and accuracy of the DWRDSM-2 model and believes that these calibration errors could be significant enough to render the conclusions in the Draft Programmatic EIS/EIR with regard to water quality open to the wrong interpretation.

In the calibration of DWRDSM-2 some of the simulated electrical conductivity (EC) values are inaccurate by as much as a factor of two during the historical calibration period (e.g., Holland Tract in August 1988 and January 1991). There also appears to be phase prediction problems in the same calibration periods (e.g., Holland Tract in February 1990). The District has previously commented on the poor calibration results of the DWRDSM-1 model (letter from Greg Gartrell to Stein Buer, dated Oct. 6, 1997). The recent DWRDSM-2 calibration results (available on the DSM-2 Internet home page) appear to be problematic in similar ways.

Presumably DSM-2 was run with a conservative scalar like TDS and then converted to EC. It is possible that no consideration was made as to whether the salt load was emanating from seawater or from agricultural drainage during the conversion process and that this could be a source of calibration error. If the DSM-2 runs were made with a non-conservative quantity like EC then correct predictions of conservative quantities (e.g., TDS) would be impossible.

The disagreement between the peaks in the DSM-2 salinity predictions and actual data for Rock Slough during the drier periods of the calibration are of serious concern. The simulated chloride concentrations for the CALFED basecase in the Draft PEIS/EIR show chloride levels at Rock Slough as high as 500 mg/L. This is double the M&I standard in the May, 1995 Water Quality Control Plan and is not representative of how the Delta would be operated in the future if the present configuration and water quality standards were retained. These high concentrations are not surprising given the calibration problems and should be taken into consideration when examining the results. The District has been assisting DWR and SWRCB staff determine the cause of the inconsistencies. The District's own preliminary analysis suggests that the over-

estimation of Delta salinity, which could lead to an incorrect estimate of required outflow, is the result of inaccuracies in the calibration of DWRDSM-2.

Usage of the Artificial Neural Networks in DWRSIM

The District understands that CALFED is considering a change to the current salinity-outflow relationship in DWRSIM to DWR's artificial neural networks (ANN) model. The relationship between salinity and Delta outflow is complex and model inaccuracies can result in significant errors when assessing the operations of the SWP and CVP with models like DWRSIM. The artificial neural networks model is significantly more complicated than the existing salinity-outflow model in DWRSIM. The calibration and verification of the ANN model must be thoroughly peer-reviewed before any official change to the existing salinity-outflow model is adopted by CALFED for use in its planning models.

The District has previously commented on the calibration and implementation of the ANNs model (letter from Greg Gartrell to Stein Buer, dated Oct. 21, 1997). In that letter, the District requested that CALFED modeling staff calibrate the ANNs with physical data instead of the simulation data produced by hydrodynamics models. This approach minimizes the error induced from numerical methods. CCWD is unaware of any previous salinity model which has been calibrated to another model when field data are readily available for calibration. Calibration with simulated data only guarantees inaccuracies, and is not sound engineering practice. The District also expressed its concern over which variables were used to develop the ANNs. A logical and rigorous approach is to develop the ANNs first with net Delta outflow (the primary variable for determining salinity in the Delta) and, if necessary to gain more accuracy, additional variables should be included in the model in order of increasing physical significance.

Comments on the Phase II Interim Report

CCWD is not an exporter of Delta water. CCWD must be described and classified as an in-Delta diverter (p. 79). CCWD's service area lies entirely within the legal boundary of the Delta or in "an area immediately adjacent thereto which can conveniently be supplied with water therefrom" as defined in the Delta Protection Act (California Water Code sections 12200 et seq.).

The discussion of the most significant technical distinguishing characteristics must focus on the most important criteria for alternative evaluation, not the criteria that are most sensitive or dependent on the alternative (p. 133).

The fact that the isolated facility does not produce yield (and actually has slightly less yield than the no-action alternative) in CALFED's studies is significant (pp. 125-6). The Draft Programmatic EIS/EIR should discuss whether the Rio Vista flow requirements affect the yield in Alternative 3 (without additional storage), relative to Alt 2? All supply increases (both amount and reliability) are attributed to additional storage. Although difficult to quantify, some supply benefits can be attributed to the operational flexibility associated with multiple Delta

export locations. However, the same flexibility can be created by pre-banking water south of the Delta and then withdrawing the supplies when Delta pumping is reduced.

CALFED must disclose reliability or exceedence data for deliveries to south-of-Delta contractors to help with the interpretation of supply impacts. The bar graphs presented in the Phase II Interim Report are useful but do not contain enough information (pp. 125-126).

The benefits of reduced South Delta pumping are described in detail but the potential impacts of an inefficiently screened 10,000 cfs diversion facility at Hood, particularly to out-migrating Sacramento salmon, is not discussed in enough detail (pp. 139-146). Under current operations, the percentage of out-migrating Sacramento River salmon being entrained in the South Delta pumps is very low (1 to 3%). A screened intake at Hood will put 100% of out-migrating salmon at risk. Even if the screen effectively screened 95% of the fish, on net, the Sacramento River salmon would be in more jeopardy compared to the existing pumping operations.

Flow and salinity control barriers are included in the South Delta Modifications program (p. 31). CALFED must recognize that the operation of the proposed barriers will adversely affect salinity levels at the District's intakes on Old River and mitigation will be necessary.

The CALFED statement "*total project exports, including isolated facility conveyance diversions, are limited in May to 5,000 cfs*" refers to a DWRSIM operating rule (p. 102). The biological basis for this operating rule must be discussed.

The X2 sensitivity study is unclear (p. 127). Do the X2 results include alternatives with additional storage? Is the ERPP included in these sensitivity studies? Does the environmental portion of additional storage contribute to the enhanced X2 standard? References to specific DWRSIM study numbers (that are accessible to stakeholders) would be the easiest way of clearing up the modeling assumption issues. The maximum water supply impacts of the X2 studies in the drier years must be identified. Clearly there are large impacts to contractors (300-450 TAF) in a few of the years in the critical period because the 1928-34 average impact is about 200-250 TAF and some of the years in the period are wet enough to have a small or no impact.

The comment "*reduction in storage effectiveness*" regarding the E/I ratio sensitivity studies is unclear (p. 129). Does this mean that supply losses are larger when more restrictive E/I ratios are implemented with new storage compared to cases with only existing storage?

CALFED uses QWEST (the westward flow in the San Joaquin River near Antioch) as a parameter to evaluate the effects on fisheries of the export pumps in the South Delta. However, the District questions the biological and transport significance of QWEST in an estuary that is dominated by tidal mixing and exchange. Residual (or mean) flow near Antioch can be orders of magnitude smaller than the instantaneous flow (p. 142).

Comments on the Water Use Efficiency Appendix

CALFED uses a single evapotranspiration (ET_o) rate (p. 5.13) of 3.3 feet/year for the San Francisco Bay Area region (UR4), which includes CCWD as well as the coastal regions in the Bay Area. The CCWD service area ET_o is approximately 4.2 feet/year, a rate similar to the mid-Central Valley regions. Using a cool-climate rate in a highly variable climatic region like the Bay Area could have an adverse impact on savings goals for the programs. That is, approximately one-fourth less savings for the CCWD service area if customers were to adhere to the ET_o standard proposed by CALFED. A sub-region ET_o rate of 4.4 feet/year for the CCWD service area and other areas of the Bay Region east of the Oakland Hills must be considered.

The estimate of overuse on landscaping on page 5.14 is too high (1.2 x ET_o). The quantity used in DWR's Bulletin 160-98 (1.0 x ET_o) is more accurate and must be considered.

The Draft Programmatic EIS/EIR assumes that local landscape ordinances to force dryscape will be enacted (p. 5.16). CALFED is considering more programs including incentives and "a more concerted effort, through urban agency certification." If these landscape savings goals are contained in the CALFED plan, it must include a requirement that the Legislature mandate dryscapes statewide, rather than putting the burden to local agencies to decide if it is appropriate in their service area. The Draft Programmatic EIS/EIR also shifts more acreage to low water use "based on professional judgment" with no backup given as to the standards that will apply.

Industrial demands are assumed to drop or stabilize (p. 5.18). CCWD questions the assumptions (which include more water efficient process, less manufacturing, and less industry in the State) that are used to support this statement. Industrial water use is highly variable from agency to agency. In many agencies (including CCWD), industries have already made major reductions and may not be able to achieve more. Some industries are even experiencing increases in usage beyond their control (for example, the oil refining industry due to new processes mandated on them that require more water use). CCWD projects only a 1.5% additional saving in its industrial sector by 2020.

The projected program for Commercial, Industrial and Institutional Conservation (pp. 5.16-18) is overly ambitious, projecting 15% to 30% more reductions. The Commercial, Industrial and Institutional Conservation (CII) sector of CCWD's customer base has already achieved a 20% reduction. Further savings could be very costly, if achievable. CCWD suggests that CALFED analyze how these additional savings can be achieved in local areas. CCWD analysis finds that a 15% reduction in commercial water use is about the maximum achievable without significant legal mandate.

Reducing system loss to 8-10% is achievable (pp. 5.21-22), but 5% is not. The conservation plan in the Draft Programmatic EIS/EIR should not assume savings due to reduced leaks given the variability in systems and uncertainty about savings.

Additional CALFED conservation gains (pp. 5.10-11) are largely undefined. CALFED assumes that audits and more water efficient appliances will reduce water demand but a portion of the reduction will occur from the "development of additional technologies and incentive programs that go beyond BMPs currently suggested in the urban MOU." This must include agreed-upon "off ramps" to assure that if this undefined technology does not develop as envisioned, that agencies will not be held to its standard. Although no change in lifestyle is anticipated to allow these gains to occur, CALFED acknowledges that "strong incentive programs and public outreach" will be required to achieve the Program's desired level of conservation. Statewide funding must be included at a sufficient level to fund these lofty targets. Again, CCWD believes that the CALFED urban conservation goals are too aggressive and must be made more realistic.

Savings Estimates: The Water Use Efficiency technical appendix notes that DWR expects full implementation of urban BMPs (p. 1-5). Urban purveyors have noted that full implementation of BMPs as described by DWR will depend upon local determinations of cost effectiveness and it is unlikely that all BMPs will be found cost-effective on a local level. Supplemental funding from CALFED will allow for implementation of BMPs not cost effective on a local level to meet an overall statewide level of cost-effectiveness or other CALFED objectives.

Efficiency definition: CALFED has defined water use efficiency (p. 2-1) as those local management actions that increase the achievement of CALFED goals and objectives. CCWD supports this expansive definition beyond that simply of physical efficiency. However, it is important to underscore the cornerstone of each MOU. A local cost-effectiveness test is the driver for implementation of conservation actions or recycling programs. Where there is a statewide interest in pursuing conservation or recycling above the threshold of a local cost effectiveness test, statewide supplemental funding must be provided to affect such actions.

Linkages: CCWD has concern regarding how linkages between progress on water use efficiency elements and other program components are developed as discussed on page 2-14. CALFED is proposing to withhold action on a water supply component until a set of assurances has been developed. However, once those assurances have been developed, benefits (e.g., storage) for agencies pursuing good faith efforts (certification) must not be withheld because of non-performance of others.

Specific levels of funding must be developed for supporting BMP implementation. Technical support for developing BMP plans must be available to all agencies on a cost share basis. Supplemental funding for BMP implementation must be provided by CALFED to the marginal level of state-wide cost effectiveness where CALFED objectives are served.

Comments on the Program Alternatives Appendix

The CALFED Draft Programmatic EIS/EIR fails to recognize seawater intrusion as a significant source of water quality problems for the Delta during low Delta outflow periods (p. 12). Increasing Delta outflow must be recognized as a method for improving Delta water quality just

as decreasing fresh water inflow must be recognized as an action that degrades South Delta water quality (p. 13). These factors must be discussed in the Programmatic EIS/EIR.

In general, water quality improvement actions are designed to reduce loading from sources and to list source reduction target levels. To some extent, the target levels must be discussed in a broader context which reflects urban source water quality goals and the relationship between disinfection byproduct formation, water treatment plant operation, and constituents in source water (pp. 11-12).

With regard to improving source quality for drinking water uses, the discussion of the Water Quality Program additions must include relocating Delta island drainage discharges away from the drinking water intakes or treating the Delta island drainage to remove organic carbon (main document, p. 2-22).

Comments on the No Action Alternative Appendix

CCWD agrees with CALFED that the Rock Slough Fish screen, as mandated by the CVPIA, should be part of the CALFED No Action Alternative (p. B-29).



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